

**MATERIALS LICENSE**

Pursuant to the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974 (Public Law 93-436); and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70; and in reliance on statements and representations hereinabove made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below, to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 103 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		In accordance with the letter dated December 3, 2004,	
		3. License number 18-00915-03 is amended in its entirety to read as follows:	
		4. Expiration date September 30, 2005	
		5. Docket No. O30-04630 Reference No.	
1. United States Department of Agriculture Office of Procurement & Property Management Radiation Safety Staff		7. Chemized under physical form	8. Maximum amount that licensee may possess at any one time under this license
2. Mailstop 5510 5801 Sunnyside Avenue Beltsville, Maryland 20705-1500		A. Any, except sealed sources	A. As needed
6. Byproduct, source, and/or special nuclear material		B. Any, except sealed sources	B. See Condition 12
A. Any byproduct material with atomic numbers 1 through 83 and a half-life less than or equal to 120 days		C. Sealed sources	C. Not to exceed 250 millicuries per source and 10 curies total
B. Any byproduct material with atomic numbers 1 through 83 and a half-life greater than 120 days		D. Plated sources or foils	D. Not to exceed 1 curie per source and 4 curies total
C. Any byproduct material with atomic numbers 1 through 83		E. Sealed sources	E. Not to exceed 15 millicuries per source and 150 millicuries total
D. Hydrogen 3		F. Plated sources or foils	F. Not to exceed 20 millicuries per source and 4 curies total
E. Iron 55		G. Sealed sources	G. Not to exceed 50 millicuries per source and 1 curie total
F. Nickel 63			
G. Cadmium 109			

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6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
H. Cesium-137	H. Sealed sources	H. Not to exceed 15 millicuries per source and 20 curies total
I. Americium-241	I. Sealed sources	I. Not to exceed 1,050 curies per source and 20 curies total
J. Curium-244	J. Sealed sources	J. Not to exceed 50 millicuries per source and 100 millicuries total
K. Californium-252	K. Sealed sources	K. Not to exceed 0.2 millicuries per source and 2 millicuries total
L. Any byproduct material identified in 10 CFR 35.100	L. Any radiopharmaceutical identified in 10 CFR 35.100	L. As needed

9. Authorized use:

- A. through K. Research and development as defined in 10 CFR 30.4 including animal studies; in gauging and measuring devices and in field studies.
- L. Studies on human research subjects as approved by a Radioactive Drug Research Committee (RDRC) that has been approved by the Food and Drug Administration (FDA).

**CONDITIONS**

- 10. Licensed material may be used at locations and facilities of the U.S. Department of Agriculture and at temporary job sites of the licensee anywhere in the United States, as authorized by the licensee's Radiation Safety Committee, except that licensed material for research studies in humans shall not be used on the premises of a medical institution licensed pursuant to Section 35.11 of 10 CFR Part 35 or equivalent regulations of an Agreement State.
- 11. A. Licensed material shall be used by, or under the supervision of, individuals designated in writing by the Radiation Safety Committee, Dr. Ronald Korcak, Chairman.
- B. The use of licensed material in or on humans shall be by a physician, dentist, or podiatrist as defined in 10 CFR 35.2.

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- C. Individuals designated in writing to work as authorized users as defined in 10 CFR 35.2, shall meet the training and experience criteria established in 10 CFR Part 35, Subpart J and shall be designated by the licensee's Radiation Safety Committee.
- D. The Radiation Safety Officer for this license is John T. Jensen.
12. If only one radionuclide is possessed, the possession limit is the quantity which is less than or equal to  $10^3$  times the applicable quantity specified for that radionuclide in Appendix B to 10 CFR Part 30. If two or more radionuclides are possessed, the possession limit is determined as follows: For each radionuclide, determine the ratio of the quantity possessed to  $10^3$  times the applicable quantity specified for that radionuclide in Appendix B to 10 CFR Part 30. The sum of the ratios for all radionuclides possessed under the license shall not exceed unity.
13. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material at a single location to quantities below the limits specified in 10 CFR 30.72 which require consideration of the need for an emergency plan for responding to a release of licensed material.
14. Licensed material shall not be used in or on human beings except as provided otherwise by specific conditions of this license.
15. The licensee shall possess and use byproduct material for "medical use", as defined in 10 CFR 35.2, in accordance with the prescriptive and performance criteria in all sections of 10 CFR Part 35 applicable to human research subjects and the uses listed in 10 CFR 35.100.
16. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.
17. Experimental animals, or the products from experimental animals, that have been administered licensed materials shall not be used for human consumption.
18. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed six months or at the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to primarily emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.

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- D. Sealed sources need not be tested if they contain only hydrogen-3; or they contain only a radioactive gas; or the half-life of the isotope is 30 days or less; or they contain not more than 100 microcuries of beta- and/or gamma-emitting material or not more than 10 microcuries of alpha-emitting material.
- E. Sealed sources need not be tested if they are in storage and are not being used; however, when they are removed from storage for use or transferred to another person and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The leak test shall be capable of detecting the presence of 0.005 microcurie (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 becquerels) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.
- G. Tests for leakage and/or contamination, including leak test sample collection and analysis, shall be performed by the licensee or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
- H. Records of leak test results shall be kept in units of microcuries and shall be maintained for 5 years.
19. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
20. The licensee shall conduct a physical inventory every six months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory and shall include the radionuclides, quantities, manufacturer's name and model numbers, and the date of the inventory.
21. A. Detector cells containing a titanium tritide foil or a scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents the foil temperatures from exceeding that specified in the certificate of registration referred to in 10 CFR 32.210.
- B. When in use, detector cells containing a titanium tritide foil or a scandium tritide foil shall be vented to the outside.
22. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport, storage or when not under the direct surveillance of an authorized user.

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23. Any cleaning, maintenance, or repair of the gauges that requires detaching the source or source rod from the gauge shall be performed only by the manufacturer or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
24. A. If the licensee uses unshielded sealed sources extended more than 3 feet below the surface, the licensee shall use surface casing that extends from the lowest depth to 12 inches above the surface and other appropriate procedures to reduce the probability of the source or probe becoming lodged below the surface. If it is not feasible to extend the casing 12 inches above the surface, the licensee shall implement procedures to ensure that the cased hole is free of obstruction before making measurements.  
B. If a sealed source or a probe containing sealed sources becomes lodged below the surface and it becomes apparent that efforts to recover the sealed source or probe may not be successful, the licensee shall notify the U.S. Nuclear Regulatory Commission and submit the report required by 10 CFR 30.50(b)(2) and (c). The licensee shall not abandon the sealed source or probe without obtaining the Commission's prior written consent.
25. The licensee is authorized to hold byproduct material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal without regard to its radioactivity if the licensee:  
A. Monitors byproduct material at the surface before disposal and determines that its radioactivity cannot be distinguished from the background radiation level with an appropriate radiation detection survey meter set on its most sensitive scale and with no interposed shielding; and  
B. Removes or obliterates all radiation labels, except for red stippling on materials that are within containers and that will be managed as biomedical waste after they have been released from the licensee; and  
C. Maintains records of the disposal of licensee materials for 3 years. The record must include the date of disposal, the survey instrument used, the background radiation level, the radiation level measured at the surface of each waste container, and the name of the individual who performed the disposal.
26. Radioactive waste generated shall be stored in accordance with the statements, representations, and procedures included with the waste storage plan described in the licensee's application dated October 17, 1994.
27. Pursuant to 10 CFR 20.1302 and 20.2004 the licensee is authorized to dispose of licensed material by incineration provided the gaseous effluent from incineration does not exceed the limits specified for air in Appendix B, Table 2, 10 CFR Part 20. The licensee is authorized to utilize the incinerators at the locations specified in Section 11.2 of the licensee's application dated October 17, 1994.

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28. Pursuant to 10 CFR 20.2002, the licensee may dispose of incinerator ash containing radioactive materials with Atomic Nos. 4 through 83, except the radionuclides identified below, as ordinary waste in a landfill provided the concentration of the radionuclides (in microcuries per gram of ash) at the time of disposal are no greater than the values in Table II, Column 2, 10 CFR Part 20, Appendix B. For hydrogen-3, carbon-14, aluminum-26, chlorine-36, silver-106m, molybdenum-94, iodine-129, technetium-99, and thallium-204, the concentration can be no greater than one tenth of the value in Table II, Column 2, 10 CFR Part 20, Appendix B.
29. A. The licensee is authorized to initiate characterization activities at its radioactive waste burial site located at its facilities in Beltsville, Maryland.
- B. The characterization activities shall be conducted in accordance with the Characterization Survey Work Plan dated November 2004, that was submitted with letter dated December 3, 2004.
- C. On or before December 1, 2005, the licensee shall submit to the NRC a comprehensive plan for the decommissioning of the radioactive waste burial site, including the expected date of completion of decommissioning of the site.
30. The licensee shall maintain control of each site where it disposed of radioactive material by burial and shall continue to monitor the Beltsville burial site in accordance with letter dated July 2, 1992. No additional burials of radioactive material are authorized by this license.
31. Notwithstanding the requirements of 10 CFR 30.36(j), the licensee is not required to notify the NRC that the licensee has decided to cease principal activities at an entire site if:
- The licensee material used at the site was only in the form sealed sources; and
  - The total activity used at the site did not, at any time, exceed one curie; and
  - All sealed sources to be removed from the site have been leak tested within the six months prior to their removal date;
  - No leak test of any source, performed while the source was possessed at the site, revealed the presence of 0.005 microcurie or more of removable contamination; and
  - The licensee maintains documentation indicating the location and dates of licensed material usage.
32. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

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33. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Letter dated July 2, 1992 with enclosures
- B. Application dated October 17, 1994
- C. Letter received June 23, 1995
- D. Letter dated February 19, 1997
- E. Letter dated November 27, 1995
- F. Letter dated June 3, 1996
- G. Letter dated March 18, 1999
- H. Letter dated June 18, 1999
- I. Letter dated April 10, 2000
- J. Letter dated August 16, 2002, and enclosures
- K. Letter dated September 11, 2002
- L. Electronic mail dated September 25, 2002
- M. Letter dated December 3, 2004



For the U.S. Nuclear Regulatory Commission

Date April 8, 2005

By

*Original signed by Sattar Lodhi, Ph.D.*

Sattar Lodhi, Ph.D.  
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